

## Parte II: Armazenamento e transmissão da informação

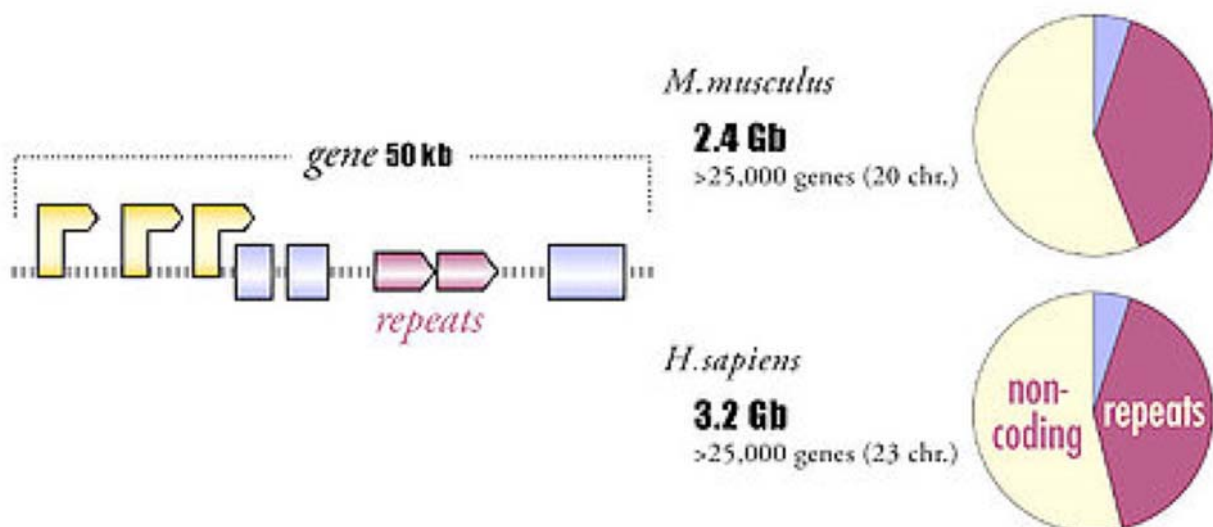
Retrotransposões e elementos genéticos móveis



© M. Gama-Carvalho, FML 2010

6/9/10

## Genoma humano



© M. Gama-Carvalho, FML 2010

6/9/10

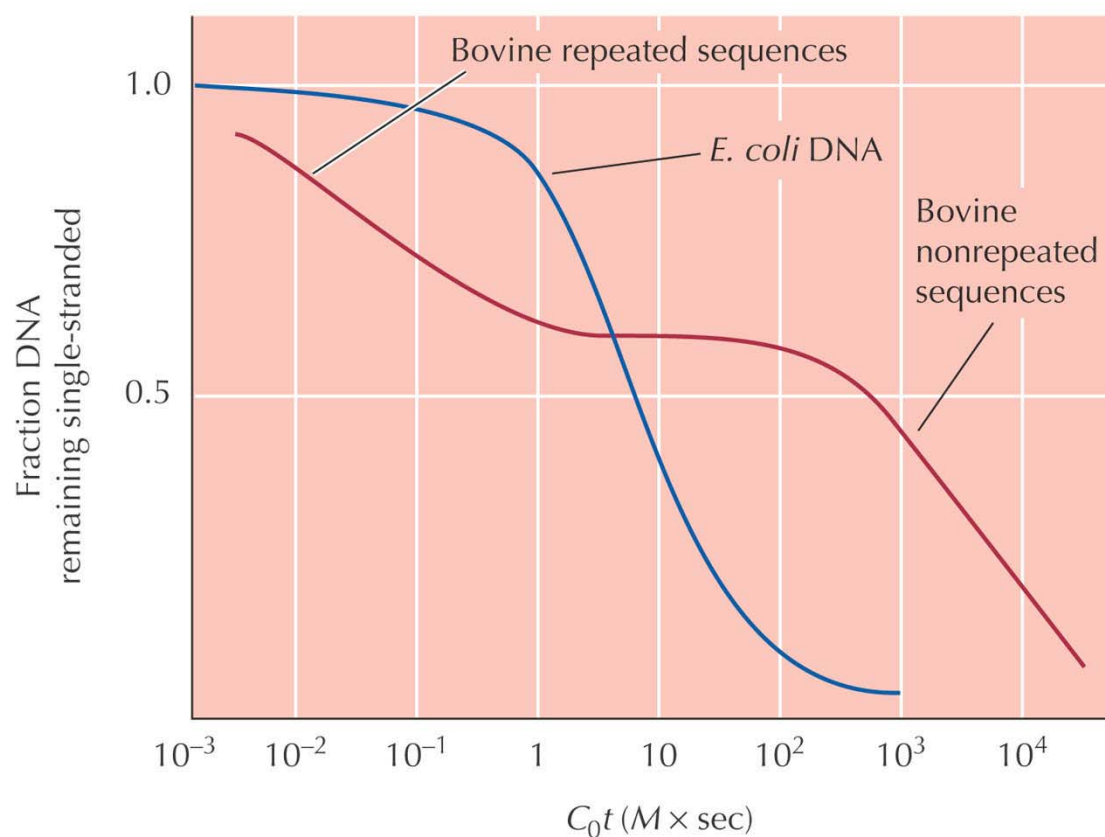
Table 4.1 Repetitive Sequences in the Human Genome

TABLE 4.1 Repetitive Sequences in the Human Genome		
Type of sequence	Number of copies	Fraction of genome
Simple-sequence repeats <sup>a</sup>	>1,000,000	~10%
Retrotransposons		
LINEs	850,000	21%
SINEs	1,500,000	13%
Retrovirus-like elements	450,000	8%
DNA transposons	300,000	3%

<sup>a</sup> The content of simple-sequence repeats is estimated from the fraction of heterochromatin in the human genome.

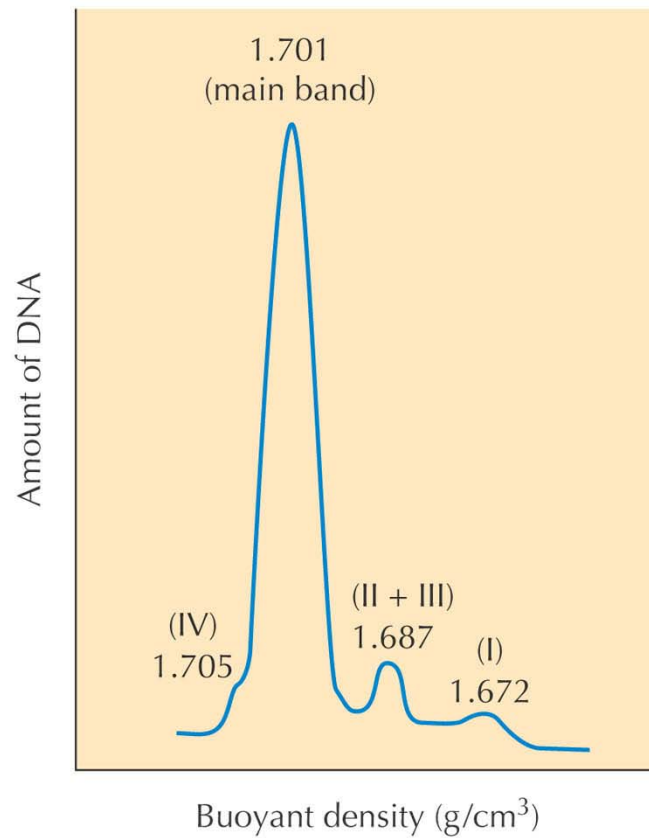
THE CELL, Third Edition, Table 4.1 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 4.6 Identification of Repetitive Sequences by DNA Reassociation



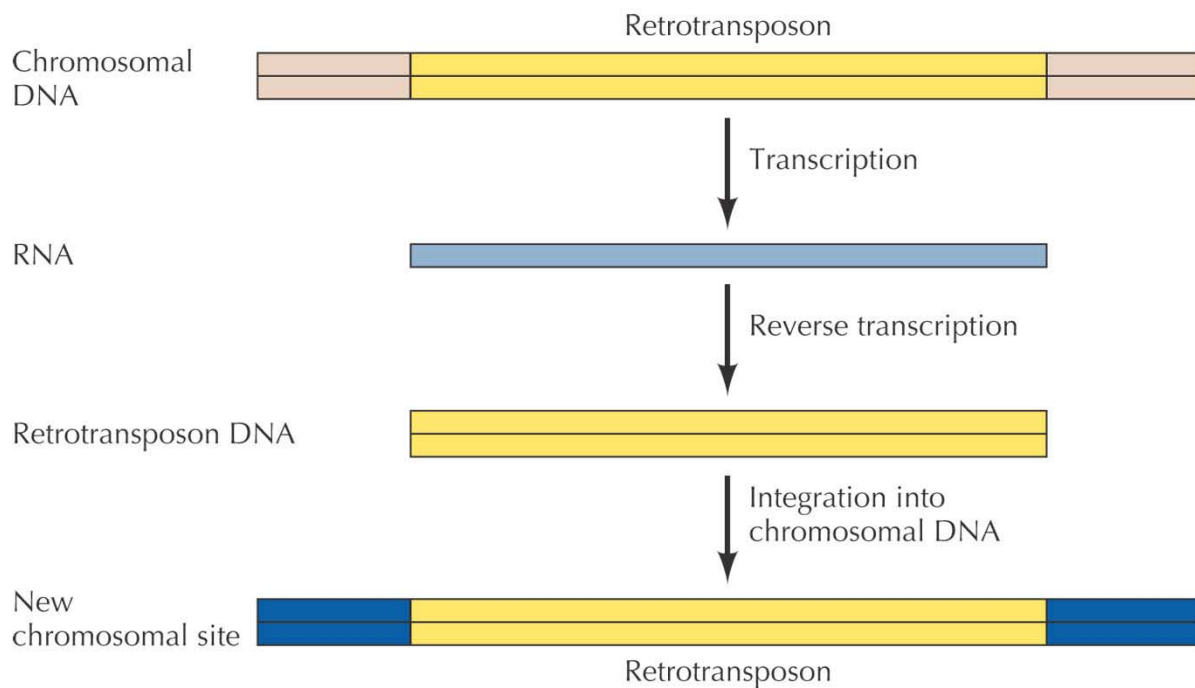
THE CELL, Third Edition, Figure 4.6 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 4.7 Satellite DNA



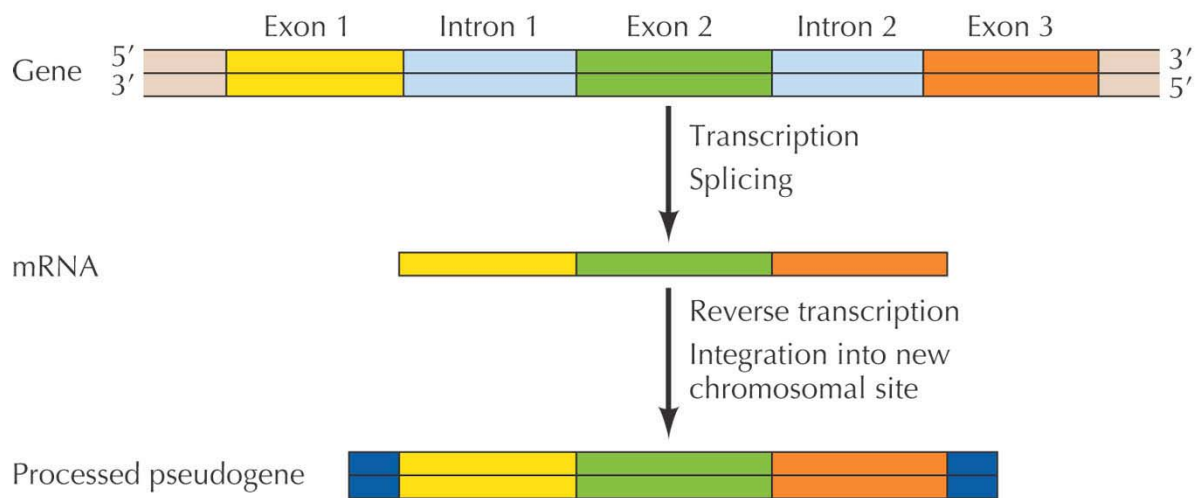
THE CELL, Third Edition, Figure 4.7 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 4.8 Movement of Retrotransposons



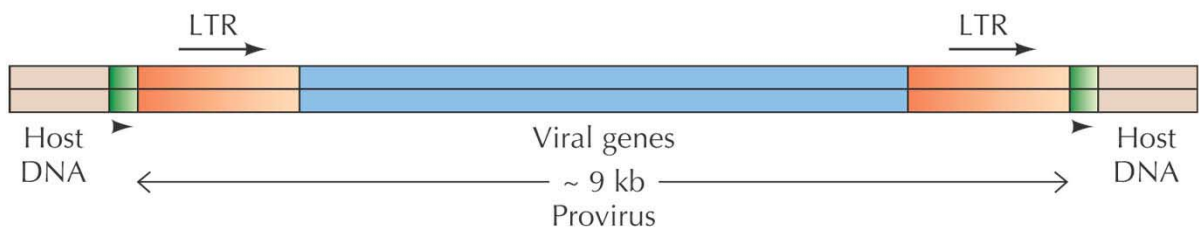
THE CELL, Third Edition, Figure 4.8 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 4.10 Formation of a Processed Pseudogene



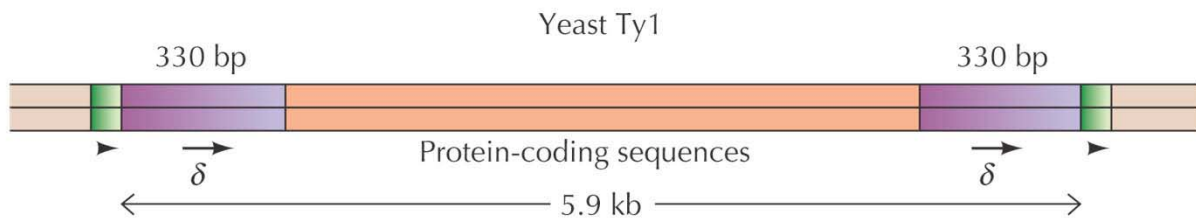
THE CELL, Third Edition, Figure 4.10 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 5.49 The Organization of Retroviral DNA



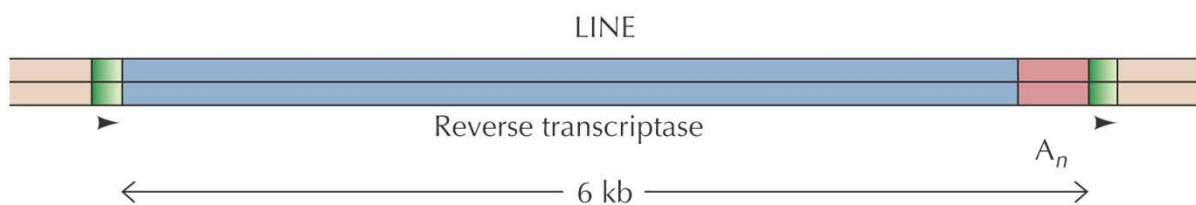
THE CELL, Third Edition, Figure 5.49 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 5.51 Structure of a LTR Retrotransposon



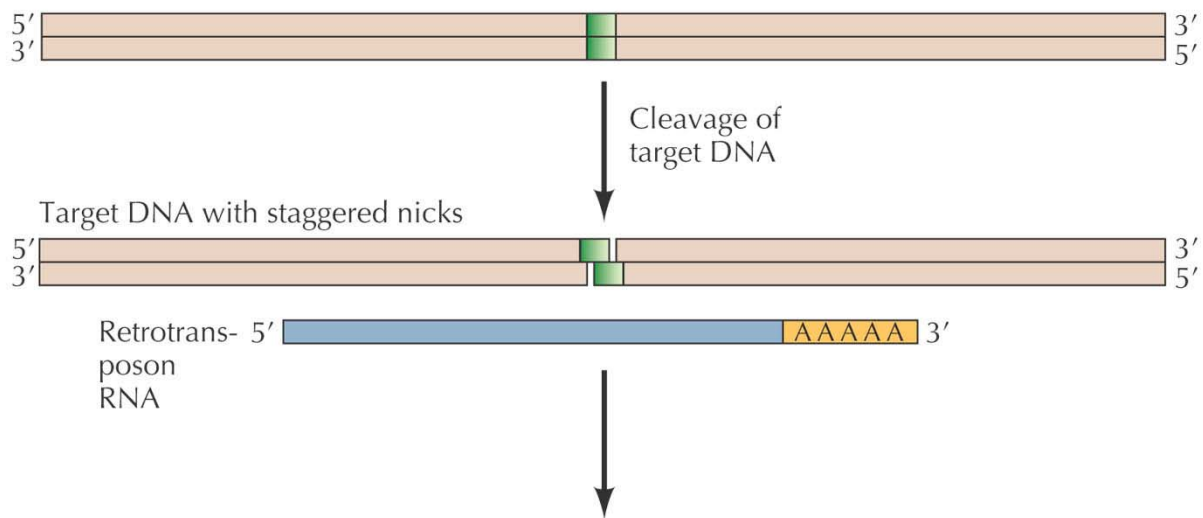
THE CELL, Third Edition, Figure 5.51 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 5.52 Structure of Human LINEs



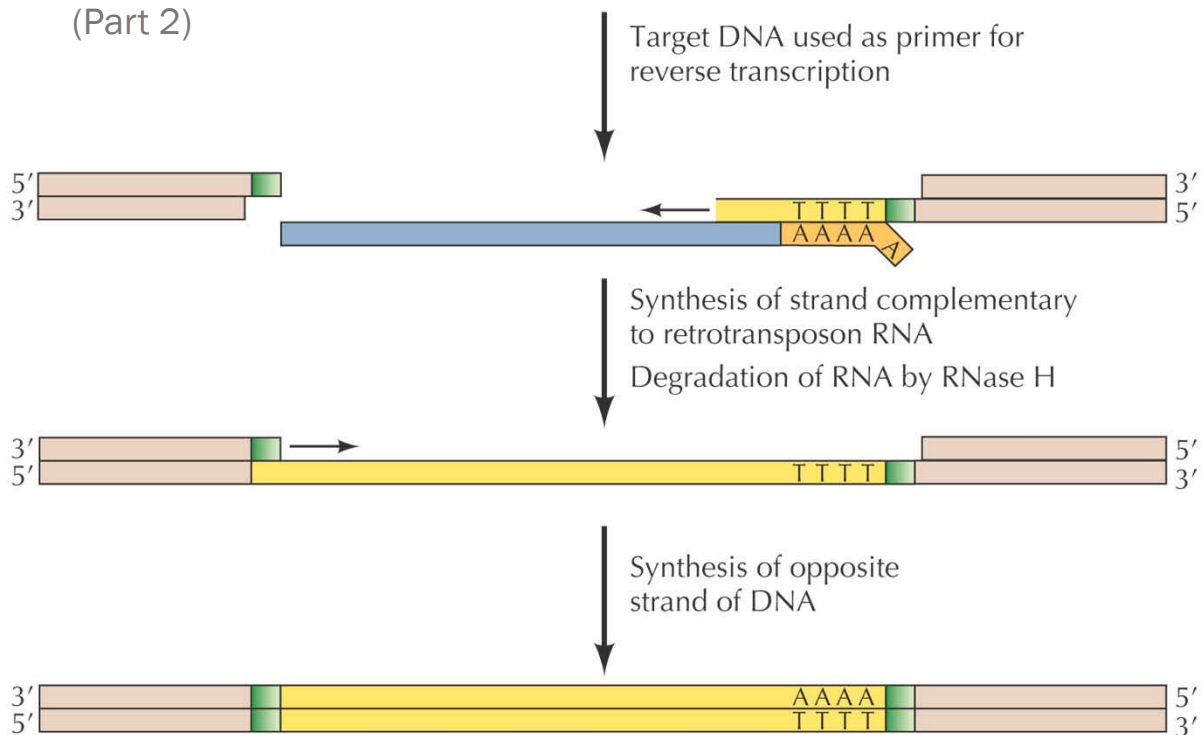
THE CELL, Third Edition, Figure 5.52 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 5.53 Model for Reverse Transcription and Integration of LINES  
(Part 1)



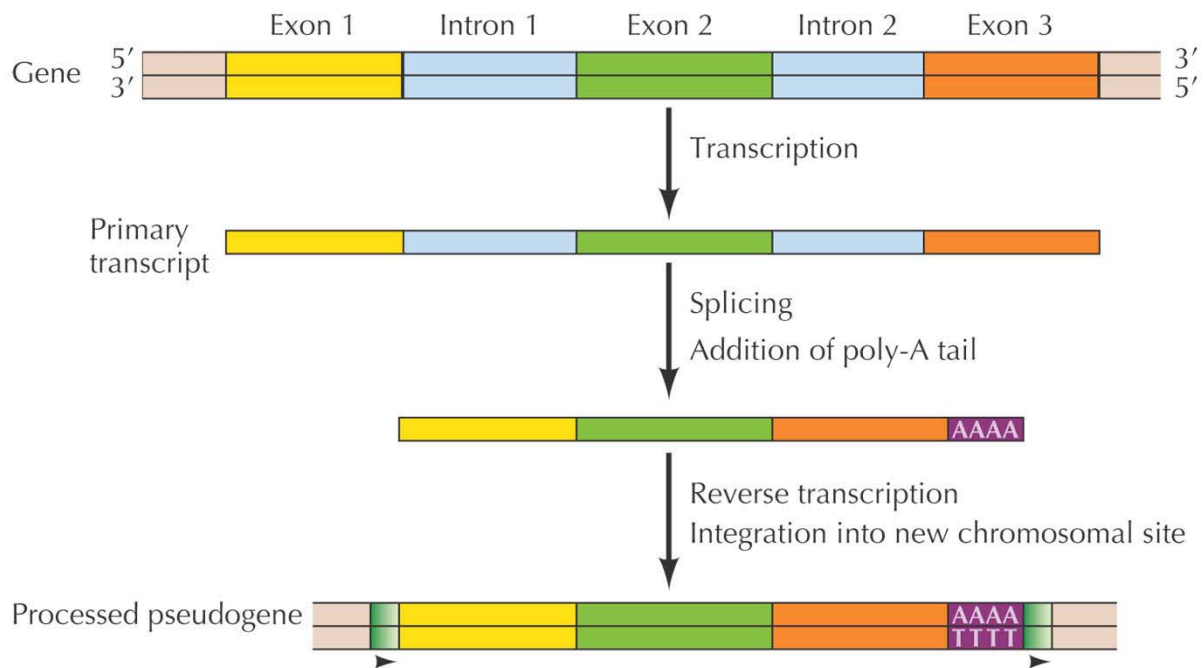
THE CELL, Third Edition, Figure 5.53 (Part 1) ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 5.53 Model for Reverse Transcription and Integration of LINES  
(Part 2)



THE CELL, Third Edition, Figure 5.53 (Part 2) ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Figure 5.54 Formation of a Processed Pseudogene



THE CELL, Third Edition, Figure 5.54 ASM Press and Sinauer Associates, Inc.  
© 2003 All rights reserved.

Contextos celulares normais em que o rearranjo de segmentos de DNA semelhante à transposição é importante:

- Geração de diversidade genética no sistema imunitário

Os eventos de transposição/retrotransposição parecem ainda ter constituído uma força positiva na evolução dos genomas pela criação de variabilidade genética e aparecimento de novos genes!